



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,236	03/24/2004	Takeshi Morikawa	1109.70145	5009

7590 10/17/2007  
Patrick G. Burns, Esq.  
GREER, BURNS & CRAIN, LTD.  
Suite 2500  
300 South Wacker Dr.  
Chicago, IL 60606

EXAMINER
----------

RICKMAN, HOLLY C

ART UNIT	PAPER NUMBER
----------	--------------

1794

MAIL DATE	DELIVERY MODE
-----------	---------------

10/17/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/808,236

**Applicant(s)**

MORIKAWA ET AL.

**Examiner**

Holly Rickman

**Art Unit**

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 10-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/24/04</u> .   | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

*Election/Restrictions*

1. Claims 10-13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected method, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 8/3/07.

*Examiner's Comment*

2. The phrase in claim 9 requiring that the recording medium "is based on a magneto-optical recording technique and comprises a multi-layer structure including the recording layer for realizing MSR, MAMMOS or DWDD" has been interpreted to mean that the recording medium is to be used in a magneto-optical recording process. This is an intended use recitation.

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno (US 6596366).

Ohno discloses a magneto-optical recording medium having a substrate, a grain size controlling layer, a reflective layer, a protective layer and a recording layer thereon. A lower

Art Unit: 1773

strata of the grain size controlling layer (see “6” in Fig 1) corresponds to the claimed first foundation layer and an upper strata of the grain size controlling layer corresponds to the claimed second foundation layer. The reflective layer (“5” in Fig 1) corresponds to the claimed initial layer and protrusion/valley controlling layer and the protective layer (see “4” in Fig 1) corresponds to the claimed functional layer.

The reference teaches a grain size controlling layer (first foundation layer) formed from Al-O (col. 6, line 49-52) which is one of the materials exemplified in Applicant’s specification. Ohno teaches that the material for the reflective layer (initial layer) is a material selected from Ag, Au, Al Cu or the like (see col. 7, lines 38-50). It would have been obvious to one of ordinary skill in the art at the time of invention to choose to use a Au reflective layer in combination with an underlying Al-O foundation layer in view of the apparent functional equivalence of each of the reflective layer materials. Au inherently satisfies the claim limitation requiring a surface tension greater than that of the foundation layer. Applicant’s specification provides support for the position that an Al-O layer and Au layer meet this claimed surface tension relationship.

As for the protective layer (functional layer) taught by Ohno, the reference teaches the use of nonmagnetic materials such as SiO<sub>2</sub> and ZnS having a layer thickness of as high as 500 nm with 200 nm being a preferred value (see col. 9, lines 21-62).

The reflective layer taught by Ohno corresponds to both the initial layer and the protrusion valley controlling layer with a surface tension greater than that of the second foundation layer. The reflective layer has a preferred surface roughness Ra of 0-2 nm (see col. 8, lines 16-29). It would have been obvious to one of ordinary skill in the art at the time of

Art Unit: 1773

invention to choose an optimal roughness value from within the range of 0-2 nm in order to achieve a high degree of surface smoothness. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

The magneto-optical structure taught by Ohno is capable of meeting the intended use limitations of claim 9 by virtue of the fact that the reference discloses a structure which is substantially the same as that claimed.

### *Conclusion*

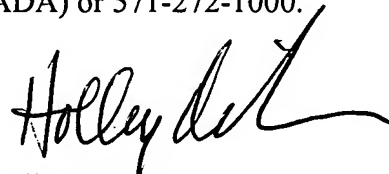
5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hashimoto, Sabi et al., Matsumoto, and Kamimura et al. are cited as art of interest.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1773

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "Holly Rickman", with a stylized flourish at the end.

Holly Rickman  
Primary Examiner  
Art Unit 1773

hr  
October 15, 2007